Weston, Massachusetts

Riverside Campus Redevelopment

Transportation Engineering Peer Review
October 2021

TRANSPORTATION ENGINEERING PEER REVIEW

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Prepared by: BETA GROUP, INC.
Prepared for: Town of Weston

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1.0 INTRODUCTION

Greatland Realty Partners (Proponent) has proposed redeveloping the existing five office buildings at 9-15 and 20 Riverside Road under a zoning amendment to include research and/or laboratory facilities supporting life science companies. The site was formerly occupied by Liberty Mutual. The proposed project would repurpose 9-11 and 20 Riverside Road, while 13-15 Riverside Road would be reconstructed. The proposed project will increase the total square footage of the properties by approximately 55,000 square feet (281,463 square feet total).

The site is located on Riverside Road in Weston and is bounded by Park Road to the west, I-90 Eastbound On-ramp to the north, I-95 to the east, and the Framingham/Worcester MBTA Commuter Rail tracks to the south. The only access to the site is from Riverside Road which is a two-lane roadway under Town jurisdiction with no shoulders or sidewalks.

In May 2021, BETA Group, Inc. (BETA) conducted a transportation peer review of the initial engineering documents submitted to the Town of Weston for the proposed development. The BETA comments made for the initial review were compared with the revised Transportation Impact Study (VHB, August 25,2021) and site plans (Gensler, VHB, August 25 and October 14, 2021) recently submitted. Additional comments were provided on the revised materials.

1.1 BASIS OF REVIEW

In conducting this peer review, the BETA team reviewed the following items:

- *Transportation Impact Study: Riverside Campus 9-15 and 20 Riverside Road*, Weston, MA, dated March 11, 2021, and revised 8/25/2021, prepared by VHB, Inc.
- Project site plans dated 8/25/2021 by Gensler and VHB, Inc.
- Off-Site Roadway Improvement Plans, 8/25/2021, and revised 10/14/2021 by VHB, Inc.
- Truck turning templates sent 10/14/2021 by VHB, Inc.
- Riverside Laboratories, Site Plan Approval – Traffic and Transportation Presentation to Weston Planning Board, VHB Inc., 10/6/2021
- Letter from Blake Estates Neighborhood to Weston Planning Board Chair, prior to October 6, 2021 public meeting
- Applicable federal, state, and industry guidelines, standards, and regulations

BETA staff held one virtual meeting with the Proponent and VHB on October 13, 2021, to ask questions regarding transportation issues and to receive clarification and additional information on project issues. VHB provided additional information as requested by BETA. In addition, BETA staff made a site visit to observe existing traffic conditions in the study area.

This peer review document outlines BETA's findings, comments, and recommendations on the engineering plans and studies submitted to the Town of Weston. The peer includes the following transportation related elements:

- Traffic
- Pedestrians and Bicycles
- Parking
- Transportation Demand Management Strategies

2.0 EXISTING CONDITIONS

2.1 STUDY AREA

The following seven locations, within the Town of Weston, were identified as study intersections in the Transportation Impact Study (TIS):

1. Park Road at I-90 Westbound Off-Ramp - unsignalized
2. Park Road at Orchard Avenue – unsignalized
3. Park Road at I-90 Eastbound On-Ramp – unsignalized
4. Park Road at Riverside Road – unsignalized
5. Park Road at Blake Road – unsignalized
6. Park Road at Recreation Road – unsignalized
7. Park Road at Intervale Road - unsignalized

Comment 2.1: The number of study area intersections was increased based on the previous review and comment from BETA (from five to seven). The intersection of Park Road at South Avenue may need to be analyzed depending on the configuration of improvements being proposed by the Proponent on the Park Road leg of the intersection.

2.2 TRAFFIC VOLUMES

Traffic turning movement counts (TMCs) used for the TIS were collected for the *Traffic Impact Study for Parking Expansion, Liberty Mutual Weston, MA,* AECOM, November 9, 2017. The counts were conducted on Wednesday, June 14th, 2017 from 7:00 AM to 10:00 AM and 3:30 PM to 7:00 PM. Based on MassDOT's Engineering Directive (May 11, 2020), the 2017 TMCs were increased by 0.3%/year to represent 2019 TMCs. Under COVID conditions, MassDOT considers 2019 to represent Existing Conditions (2020 or 2021).

Comment 2.2: The TIS provides the back-up calculations of the adjusted traffic volumes from 2017 to 2019 as requested by BETA in the previous review. Previous comment addressed.

2.2.1 SEASONAL ADJUSTMENT

Traffic on a given roadway typically fluctuates throughout the year depending on the area and the type of roadway. The seasonal traffic-volume data from a MassDOT Permanent Count Station located on Park Road south of the I-90 EB Ramps was analyzed. This information revealed that traffic volumes in June

were found to be above average conditions; and therefore, the volumes were not adjusted in order to provide a more conservative analysis condition.

Comment 2.3: BETA finds this methodology appropriate.

2.3 Vehicle Speeds

There is a 30 MPH speed limit sign on southbound Park Road, south of Riverside Road and on northbound Park Road north of Intervale Road. Based on a site visit conducted by BETA staff on Thursday, April 29, 2021, many vehicles appeared to travel above the posted speed limit on Park Road in the study area.

2.4 Crash History

Crash data for the study area intersections were obtained from MassDOT between 2013 and 2017. Incident occurrence was also compared to the volume of traffic through each intersection to determine significance and whether potential safety problems exist. Crash rates were calculated for each study area intersection and compared with the district-wide (MassDOT District 6) average of 0.57 MEV for unsignalized intersections. Based on this evaluation, none of the seven study area intersections were noted to have experienced crash rates that exceeded the district-wide averages.

Comment 2.4 Crash analysis was conducted for all seven study intersections including the intersections of Park Road at I-90 Westbound Off-Ramp and Park Road at Intervale Road that were added in the revised TIS. BETA finds this methodology appropriate.

Comment 2.5 The TIS indicates that the MBTA railroad bridge over Park Road experienced 11 vehicle crashes in the analysis period. Our review shows a total of 17 crashes striking the bottom of the 11'3" bridge. Please confirm.

3.0 Future Conditions

3.1 Analysis Year

In accordance with MassDOT *Transportation Impact Assessment Guidelines*, The *Transportation Impact Study* prepared by VHB for the Riverside Campus evaluated the project's impacts over a 10-year design horizon.

Comment 3.1: BETA finds this methodology acceptable.

3.2 No-Build Traffic Volumes

3.2.1 Historic Traffic Growth

For consistency with the *Functional Design Report, Weston – Route 30 Reconstruction,* MassDOT, HSH, July 2020, the TIS used an annual growth rate of 0.5% to account for potential traffic growth over the next 10 years.

Comment 3.2: The background traffic growth rate is acceptable.

3.2.2 Site-Specific Traffic Growth

Comment 3.3**:** Based on the previous BETA review and comment, future background traffic from the 518 South Avenue Residential Project and River Station were included in the analysis of the future 2029 No-Build and Build conditions. Previous comment addressed**.**

3.3 ROADWAY IMPROVEMENTS

The TIS identified the following roadway improvement projects that may impact transportation operations in the study area and within the 10-year design horizon:

- *South Avenue (Route 30) Reconstruction Project:* Proposed Improvements include a widened cross section of Route 30 for improved accommodations for traffic, pedestrians, and bicyclists; new crosswalks at the Newton Street east leg and Park Road west leg which is where the shared-use path transitions from the south side of Route 30 to the north side; an additional eastbound through lane at Park Road; repaving; and signal timing and phasing adjustments. 25% design plans have been submitted to MassDOT for review.

- *Riverside Station Redevelopment and Recreation Road Access:* Proposed improvements include modifying the Grove Street/Route 128/I-95 Interchange; enhancements to Grove Street; and making Recreation Road two-way between Grove Street and Recreation Park; and adding a shared-use path along the roadway.

- *I-90/I-95 Interchange and Charles River Bridge Reconstruction:* MassDOT has begun the design process for this interchange, but no plans are available for review at this time.

Comment 3.4: It is noted that the Intervale Road Bridge Replacement Project is now under construction by the MBTA and has resulted in road closures on Intervale Road and restricted access from neighborhood streets. The project is expected to end in the summer of 2022.

3.4 TRIP GENERATION

3.4.1 PROJECT-GENERATED TRIPS

The proposed project includes 281,463 square feet of laboratory/research and development space, as well as up to 850 parking spaces. The proposed project represents approximately 55,000 more square feet than the existing office space.

The TIS estimates that 258 vehicle trips will be generated by the proposed project in the AM peak hour and 306 vehicle trips during the PM peak hour based on trip rates documented in *Trip Generation, 10 Edition,* Institute of Transportation Engineers, 2017.

Comment 3.5: The Fitted Curve Trip Generation rate was used for Land Use Code 760 (Laboratory/R&D), even though the R-Squared value was below 0.75 (0.58). BETA agrees with methodology.

Based on the trip generation estimates, the proposed project would generate 83 fewer vehicle trips than the existing office spaces in the AM peak hour and nine fewer vehicle trips in the PM peak hour.

The estimated project vehicle-generated trips were also compared to the traffic generated by the office uses when the site was occupied pre-pandemic in 2017 (volumes adjusted up to 2019). The comparison shows that the proposed project will generate 56 more vehicle trips than the previous office uses in the AM peak hour and 121 more vehicle trips during the PM Peak hour. It is noted that in 2017 the project site was operated by Liberty Mutual but was only partially occupied and the vehicle trips generated by the office use was lower than if the site was fully occupied. Therefore, the estimated number of net new trips estimated for the proposed project may be conservatively high.

Comment 3.6: BETA agrees with the trip generation methodology.

3.4.2 Trip Distribution

Trips were assigned to the study area based on *StreetLight InSight* data metrics. The data sampled was collected on weekdays in 2017 to reflect the conditions of the study's traffic volume data.

Comment 3.7: BETA finds this methodology to be reasonable.

3.5 Build Traffic Volumes

The project generated traffic volumes were added to the 2029 No-Build traffic volumes to develop 2029 Build traffic volumes.

Comment 3.8: The 2029 Build traffic volumes were reviewed and found to be acceptable.

4.0 Transportation Operations Analysis

4.1 Intersection Capacity Analysis

Intersection Level of Service (LOS) capacity analyses were performed for the study intersections with the 2019 Existing, 2029 No-Build, and 2029 Build traffic volumes during the weekday AM and PM peak hours.

4.1.1 Unsignalized Intersection Capacity Analysis

At the Park Road intersections with I-90 EB On-Ramp, Riverside Road, Recreation Road, Orchard Avenue, and Blake Road, all of the minor intersection approach movements would operate at LOS D or better under the Existing, No-Build, and Build conditions.

At Park Road and I-90 WB Off-Ramp, the westbound left turn movements would operate at LOS F in the AM peak hour for the Existing, No-Build, and Build conditions. In the PM peak hour, project-generated traffic would deteriorate LOS from E to F.

At Park Road and Intervale Road, the eastbound approach would operate at LOS F in the AM peak hour under the Existing, No-Build, and Build conditions.

Comment 4.1: Vehicle queuing for the study intersections should be summarized in a table for scenarios, including with improvements. Previous comment addressed.

Comment 4.2: It is noted that the vehicle queuing results for the southbound left turn and northbound right turn movements onto the I-90 EB On-Ramp assume that there is no downstream queuing on I-90 eastbound that backs upstream to Park Road. At times during pre-pandemic conditions, this situation impacted operations on Park Road during the morning peak period.

Comment 4.3: The proposed southbound left turn lane on Park Road at the I-90 EB on-ramp will provide storage for left-turning vehicles and improve the situation in peak periods where southbound through vehicles are blocked by left-turning vehicles.

Comment 4.4: An exclusive northbound right-turn lane on Park Road approaching the I-90 EB On-Ramp is not part of the off-site improvements proposed by the Proponent. Under typical operating the conditions a separate right-turn lane would not provide much benefit as northbound right-turning vehicles have the right of way over southbound left-turning motorists; and therefore, would not experience any significant delays. The northbound approach currently flares out at the EB On-Ramp which provides additional width for right-turning vehicles. However, if vehicles were queued back upstream to Park Road from congestion on the I-90 mainline, right-turning vehicles may impede or block northbound through vehicles. If a right-turn were constructed it would be short, as the distance between the EB On-Ramp and Riverside Road is a little over 100 feet. In addition, it would require obtaining property and approvals from MassDOT, relocating one utility pole, grading, and potential environmental permits.

Comment 4.5: The proposed improvements show that the approach and departure travel lanes on Park Road south of South Avenue have been narrowed to 10-foot lanes to accommodate the proposed bike lanes and buffer on the west side Park Road.

4.5.1: The 10-foot-wide lanes may not be wide enough to accommodate large trucks, particularly if they are side-by-side.

4.5.2: The yellow centerline on Park Road has been shifted to the east. South of the two northbound approach lanes to the intersection, the yellow center line transitions further east to provide a single northbound lane. There is a concern that northbound vehicle queues will extend upstream on Park Road beyond the 20-foot-wide section (which can accommodate two lanes) into the 12-foot lane which can accommodate only lane of traffic. As a result, the vehicle queue may extend further south downstream on Park Road blocking the I-90 WB off-ramp, Orchard Avenue, etc. Analysis should be provided that shows the traffic operations and queuing at the intersection of Park Road and South Avenue.

4.5.3: It is uncertain how many bicyclists will choose to ride in the northbound contra-flow lane (adjacent to southbound vehicles) on Park Road between Orchard Avenue and South Avenue. Wide shoulders should be considered on the east side of Park Road in this section to accommodate northbound bicyclists who may choose to remain on the roadway.

4.5.4 An option should be considered on the west side of Park Road between South Avenue and Orchard Avenue that provides a single elevated 10-foot-wide shared pedestrian and bicycle facility (cycle track). This would allow wider travel lanes and

shoulders on Park Road which can better accommodate trucks and northbound queuing from South Avenue.

5.0 PARKING

The project concept plans show a new proposed parking structure on the site of the existing surface parking lot between Buildings D and N. The TIS and concept plans indicate a total of 850 parking spaces will be provided on-site resulting in a parking ratio of 3.02 spaces/1,000 square feet.

Comment 5.1: Indicate the number of parking levels proposed for the parking structure. VHB replied that the parking garage will have three levels (one at-grade and two above ground). Comment addressed.

Comment 5.2: The proposed 850 parking spaces appears to be adequate to accommodate demand.

6.0 PROPOSED RECOMMENDATIONS AND MITIGATION

6.1 ROADWAY IMPROVEMENTS

The TIS and Site Plan Approval Plans has identified several roadway improvements to improve traffic operations, safety, and provide a safe walking and biking environment.

Comment 6.1: Vertical curb should be provided wherever the asphalt shared use path/sidewalk is adjacent to the edge of roadway.

Comment 6.2: All pedestrian ramps should be concrete with detectable warning panels.

Comment 6.3: A significant length of the proposed shared use path on the west side of Park Road between Riverside Road and Orchard Avenue narrows to avoid ROW impacts. Typical section C-C shows this as sidewalk not a shared use path. To maintain continuity of the shared use path, consider working with the property owner and MassDOT to obtain an easement to allow continuation of the shared use path. It appears MassDOT already has an easement for sight distance on the property.

Comment 6.4: Can the shared-use path/sidewalk on the west side of Park Road be constructed without moving the existing stone wall?

Comment 6.5: Will any utility poles need to be relocated/removed to construct the shared-use path/sidewalk on the west side? It appears some may be near the center of the shared use path.

Comment 6.6: Will the shared-use path be ADA-compliant at the pinch points with the utility poles if the poles remain?

Comment 6.7: Indicate proposed drainage improvements along Park Road and Blake Road.

Comment 6.8: Will environment permits be required for the proposed improvements along Park Road?

Comment 6.9: The proposed curb extensions on both sides of Riverside Road appear to restrict turning radius for large trucks based on the turning template plan. Consider widening the intersection to avoid trucks encroaching on opposing travel lanes.

Comment 6.10: How many trees will need to be removed to accommodate the shared-use path? Will these be replaced?

Comment 6.11: Will the proposed southbound left-turn lane on Park Road between Riverside Road and Orchard Avenue require MassDOT approval and an Access Permit?

Comment 6.12: Will the proposed restriping of Park Road north of the I-90 WB Off-ramp require MassDOT approval?

Comment 6.13: The double yellow center line should have a break at the I-89 WB Off-Ramp intersection.

Comment 6.14: Will the proposed improvements include pavement mill and overlay of Park Road?

Comment 6.15: Will MassDOT have jurisdiction over the proposed bike lanes on the Park Road bridge structure? MassDOT may not allow the installation of flex posts on the bridge structure. Will MassDOT be responsible for plowing the bike lanes and maintaining the flex posts?

Comment 6.16: Can a minimum one-foot edge line be provided on both sides of Park Road from Recreation Road to South Avenue?

Comment 6.17: Confirm that the proposed curb extension on the northwest corner of Park Road and Orchard Avenue will be raised with a curb.

Comment 6.18: Explain how the proposed improvements on the south leg of Park Road at South Avenue will be coordinated with the improvements at this intersection currently under design by MassDOT.

Comment 6.19: Are the proposed 10-foot lanes, with no curb offset, on the NB Park Road approach to South Avenue adequate to accommodate trucks?

Comment 6.20: Based on the turning templates provided it appears that EB right turn truck movements on South Avenue will encroach into the EB through lane.

Comment 6.21: The terminus of the bike path at South Avenue should be integrated with the sidewalk to improve access to the pedestrian push button at the crosswalk.

Comment 6.22: Has consideration be given to providing a shared use path, rather than separate bike path and sidewalk, on the bridges over the Mass Pike to allow additional width for travel lanes?

Comment 6.23: The proposed electronic speed feedback sign proposed on the bridge over the EB Mass Pike will likely require MassDOT approval and may require structural modifications.

Comment 6.24: Can the raised 8-foot shoulder on the west side under the MBTA bridge be narrowed to allow for a 1-foot curb offset for the travel lanes?

Comment 6.25: The truck turning template plan shows that a SU-30 vehicle turning right from Recreation Road will encroach on the SB Park Road travel lane. The east abutment of the bridge restricts sight distance to the intersection from Park Road. Consider

modifying the Recreation Road intersection to minimize encroachment into Park Road and reduce potential safety issues.

6.2 Transportation Demand Management

The TIS has outlined the applicant's commitment to a robust Transportation Demand Management (TDM) plan for the Riverside Road Campus that include the following measures:

On-Site Amenities

- Moderate vehicle parking-to-square footage ratio
- Weather-protected Secure bike racks, parking, repair station, and showers/lockers
- Car-sharing space(s) on-site for employees
- Electric vehicle supply equipment (EVSE) for 5 percent of parking spaces (level 2 charging)

Off-Site Amenities

- Sidewalks and shared-use path along Park Road
- Pedestrian connection between the site and the new Park Road sidewalks

Owner/Property Manager-Sponsored Programs

- Direct, free shuttle service access to MBTA Riverside Station (7-10 AM, 4-7 PM)
- Display public transit schedules in building lobbies
- Transportation Management Association (TMA) Membership – Route 128 Business Council which would/could provide:
    - Commuter information
    - Late night/emergency ride home services
    - Shuttle service operations
    - Vanpool/carpool program to help employees form vanpools
- Vanpool/Carpool Program
    - Offer dynamic carpooling
    - Preferential parking
- Employee Commute Mode Choice Survey
    - Survey employees every two years

Employer-Sponsored Employee Incentive Programs

- Flextime support/working from home/telecommute policy
- Financial Incentives
    - Pretax transit and vanpool benefits
    - Reimburse employees for annual bike maintenance costs
    - Public transit subsidy

Comment 6.26: The Proponent should identify the level of commitment to each of the proposed TDM measures. The Proponent has committed to the proposed TDM program. Previous comment addressed.

Comment 6.27: Identify the headways for the shuttle bus during the peak periods.

Comment 6.28: The Proponent should consider providing electric vehicle charging stations on-site and conducting an annual employee transportation survey. Previous comment addressed.

Comment 6.29: The Proponent should agree to coordinate with the Town to make changes to the TDM program as needed based on the results of the employee transportation survey.

Comment 6.30: Will neighborhood residents have access to the shuttle service to Riverside Station?

Comment 6.31: Will the Proponent provide additional EVSE compatible spaces to meet additional demand as required?